Fact Sheet

California Environmental Protection Agency
Air Resources Board

Proposed Identification: Environmental Tobacco Smoke as a Toxic Air Contaminant

What is Environmental Tobacco Smoke?

- Environmental Tobacco Smoke (ETS) is a complex mixture of thousands of gases and fine particles emitted by the burning of tobacco products (sidestream smoke) and from smoke exhaled by the smoker (mainstream smoke).

- Many of the gaseous compounds react in the atmosphere within a relatively short period of time. But, under certain conditions, the particulate matter component of ETS has been shown to persist in the atmosphere for hours.

How did ARB identify ETS as a TAC?

- In 1997, the Office of Environmental Health Hazard Assessment (OEHHA), with input from Air Resources Board (ARB) staff, prepared a comprehensive report on the exposure and health effects of ETS that served as a starting point for developing the present toxic air contaminant (TAC) identification report.

- In 2001, the ARB entered ETS into the identification phase of the program.

- In December 2003, the first draft report was released for a 100 day public comment period.

- A public workshop was held in March 2004.

- Four Scientific Review Panel (The SRP is an independent 9-member group of scientific experts who review ARB reports scientific accuracy as required by Health and Safety Code section 39670) meetings were held from November 2004 through June 2005 to discuss and approve the ETS report.

What are the exposure and resulting health effects associated with ETS?

Despite an increasing number of restrictions on smoking and increased awareness of health impacts, exposures to ETS, especially of infants and children, continue to be a public health concern. Approximately 16% of the adult and adolescent California population smoke as compared to 23% for adults and 28% for adolescents, nationwide. ETS exposure is causally associated with a number of health effects, including effects on infants and children. ETS has a number of serious impacts on children's health including sudden infant death syndrome (SIDS), cause and exacerbation of asthma, increased respiratory tract infections, increased middle ear infections, low birth weight, and developmental impacts.

Health Effects that Result from ETS Exposure

- Developmental Effects**:** fetal growth, sudden infant death syndrome, and pre-term delivery

- Respiratory Effects: Acute lower respiratory tract infections in children (*e.g.,* bronchitis and pneumonia), asthma induction and exacerbation in children and adults, chronic respiratory symptoms in children, eye and nasal irritation in adults, middle ear infections in children

- **Carcinogenic Effects: lung cancer, nasal sinus cancer, breast cancer in younger primarily pre-menopausal women**

- **Cardiovascular Effects:** heart disease mortality, acute and chronic coronary heart disease morbidity, altered vascular properties

Health Impacts of ETS Exposure Each Year in California

- Over 400 additional lung cancer deaths

- Over 3,600 cardiac deaths

- About 31,000 episodes of childrens asthma

- About 21 cases of SIDS

- About 1,600 cases of low birthweight in newborns

- Over 4,700 cases of pre-term delivery

Why is ETS public exposure of concern?

- Several studies have documented indoor levels of ETS. A comparison of studies indicates smokers' homes have indoor nicotine levels averaging about 30 times higher than a non-smokers' home.

- Even higher levels are found in vehicles where average particulate concentrations are up to 10 times higher than the average particulate concentrations found in the homes of smokers.

- Many of the substances found in ETS have already been identified as toxic air pollutants and have known adverse health effects such as 1,3-butadiene, acetaldehyde, acrolein, arsenic, benzene, benzo[a]pyrene, cadmium, hexavalent chromium, and formaldehyde.

- Approximately 40, 365, and 1,900 tons per year of nicotine, respirable particles, and carbon monoxide, respectively, from tobacco smoke, are emitted into California's air each year.

- Non-smokers are exposed to ETS in several different environments, such as outside office buildings, schools, businesses, airports and amusement parks. The ARB monitored outdoor nicotine (a marker for ETS) concentrations in these environments and found that some of the highest nicotine monitoring results are comparable to those found in some smoker's homes.

- Overall, estimated average exposure concentrations for adults and children who live with smokers are several hundred times higher than those who live in non-smoking environments. Such exposures are especially of concern for young children because they are likely to recur daily and may adversely affect their physiological development.

What will happen as a result of identifying ETS as a TAC?

- Upon identification as a TAC, the ARB will develop a risk reduction report on the potential actions to reduce ETS exposures in California.

- The risk reduction report will review state and local anti-smoking programs, public education efforts regarding the effects of exposure, and identify additional opportunities to reduce risk.

- In addition, the ARB will obtain additional data to better characterize the public's exposure to ETS and associated effects.

For More Information

Please contact the ARB toll-free at (800) END-SMOG (California only) or (800) 242-4450 (outside California).

If you are handicapped, you may obtain this document in an alternative format. Contact ARB's ADA Coordinator at: (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento area only); or (800) 700-8326 (TDD, outside Sacramento).

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